

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IL2004/000584

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 B05B3/04 F16C17/08

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 B05B F16C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 121 769 A (DRORI MORDEKI) 24 October 1978 (1978-10-24) column 2, line 52 - line 61; figure 1	1-11
X	EP 0 743 464 A (BITRON SPA) 20 November 1996 (1996-11-20)	14-19
Y		1-11
Y	column 3, line 24 - line 41 column 4, line 8 - line 14; figures 2,3	12,13
X	GB 530 912 A (ARPAD NAGY) 24 December 1940 (1940-12-24)	14-19
A	page 3, line 43 - line 78 page 3, line 118 - page 4, line 6; figures -/--	4-7

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

29 November 2004

Date of mailing of the international search report

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 018 442 A (NEGES JOSEF ET AL) 25 January 2000 (2000-01-25) column 4, line 40 - column 5, line 10; figure 2	14-17,19
X	PATENT ABSTRACTS OF JAPAN vol. 0120, no. 10 (M-658), 13 January 1988 (1988-01-13) & JP 62 171515 A (MATSUSHITA ELECTRIC IND CO LTD), 28 July 1987 (1987-07-28)	14-17,19
A	abstract	1
X	US 2002/063483 A1 (OBARA RIKURO) 30 May 2002 (2002-05-30) paragraph '0007!; figures	14-17,19
X	US 6 199 771 B1 (CLEARMAN JOSEPH H ET AL) 13 March 2001 (2001-03-13)	20,21
Y	column 13, line 7 - line 16; figure 18	12,13
A	AU 466 099 B (DIVERSEY PTY. LIMITED) 10 October 1974 (1974-10-10) page 3 - page 4; figure	12,13, 20,21
A	US 5 848 843 A (LEE CHANG-WOO) 15 December 1998 (1998-12-15) column 4, line 36 - line 48; figures 3A,3B	9

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IL2004/000584

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-11 14-19

A rotary sprinkler comprising a rotor with an axle having a tip, and a thrust bearing with a socket having a bottom, said socket being adapted to receive for rotation said axle so that said tip abuts said bottom in a contact zone, wherein said sprinkler further comprises at least one hard element constituting at least a part of said bottom or said tip located in said contact zone, said element being made of harder material than said axle or said socket.

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2. claim: 12 13 20 21

A rotary sprinkler comprising a rotor with an axle having a tip, and a thrust bearing with a socket having an inlet opening of diameter  $D_0$ , a bottom and a peripheral wall therebetween, said socket being adapted to receive slidably and rotatably said axle through said inlet opening so that said tip can abut said bottom, wherein said tip has diameter  $D_1$  close to  $D_0$ , while an adjacent portion of said axle has diameter  $D_2 < D_1$ , such that, when said tip abuts said bottom, an open annular gap is formed between the axle and the peripheral wall, and when said tip is aligned with said inlet opening, said inlet opening is essentially closed.

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IL2004/000584

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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